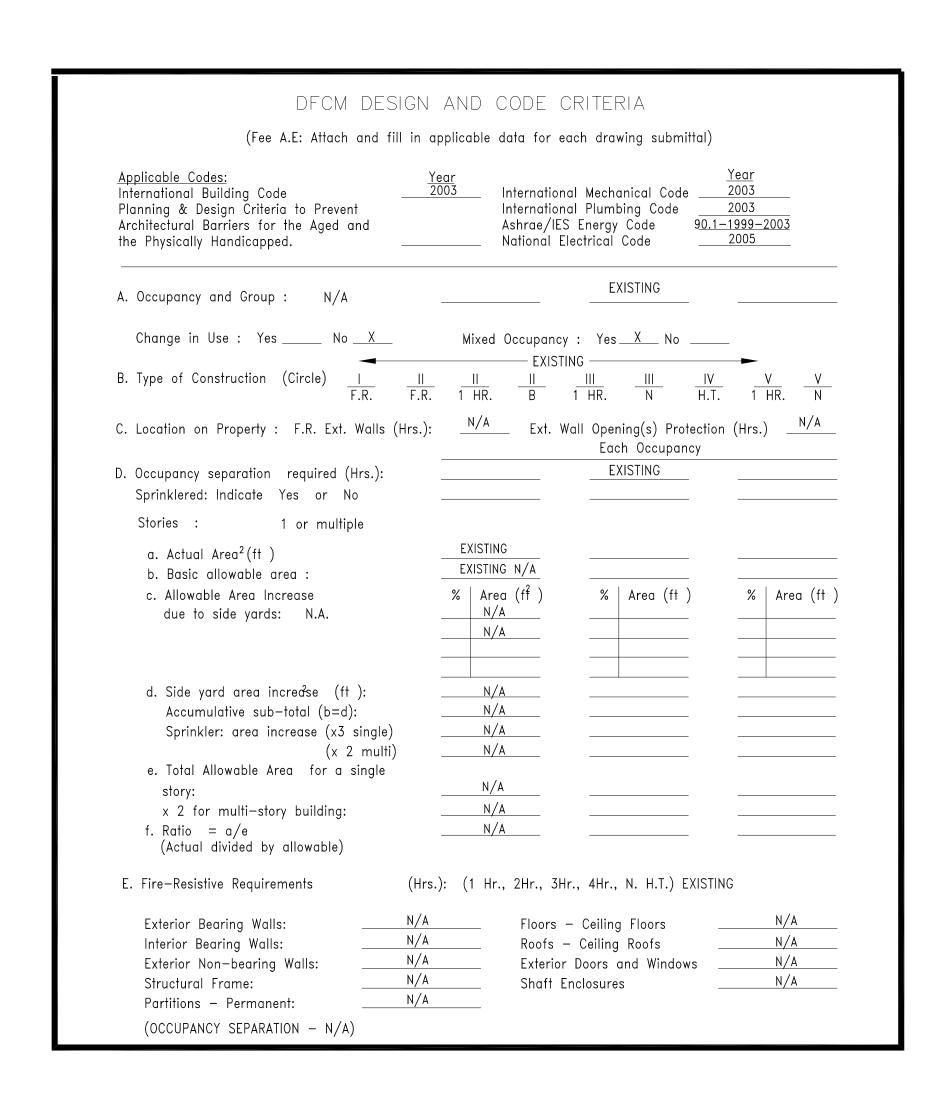
# DEPARTMENT OF ENVIRONMENTAL QUALITY

# BUILDING #2 HVAC SYSTEM UPGRADE DFCM PROJECT NO. 06170310 SALT LAKE CITY, UTAH





State of Utah—Department of Administrative Services

# DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

4110 State Office Building / Salt Lake City, Utah 84114 / 538-3018

MECHANICAL ENGINEER
WHW ENGINEERING, INC.
1354 EAST 3300 SOUTH
SUITE 200
SALT LAKE CITY, UTAH 84106
PHONE: (801) 466-4021 FAX: (801) 466-8536

# **DRAWING INDEX:**

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 MD102 ROOF MECHANICAL DEMOLITION PLAN
 MD103 BOILER ROOM DEMOLITION DETAILS

MD401 LARGE SCALE BOILER ROOM DEMOLITION PLAN

ME101 2ND FLOOR MECHANICAL PLAN
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ME401 LARGE SCALE BOILER ROOM PLAN
ME501 MECHANICAL DETAILS
ME601 MECHANICAL SCHEDULES

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GENERAL TERMINOLOGY  AIR SIDE  BESTING AIR DUCT TO REMAIN  SECTION LETTER DESIGNATION  SECTION DRAWN ON THIS SHEET  DETAIL NUMBER DESIGNATION CORRESPONDING WITH GRID LOCATION CORRESPONDING WITH GRID		1	_			MECHANICA	AL LEGEN	ND		,		
SECTION LETTER DESIGNATION	SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	<u>.L</u>
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EQUIMENT TIME DESIGNATION    Common time   C	AZ		CORRESPONDING WITH GRID LOCATION			RETURN OR OUTSIDE AIR DUCT DOWN				<u> </u>		7
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A   REVISION DESIGNATOR AND NUMBER   M   M/D   MOTORIZED VOLUME DAMPER   C_3   GLOBE VALVE - STRAIGHT PATTERN   -3	D 1		GRILLE, OR LOUVER DESIGNATION WHERE			EXISTING EQUIPMENT TO REMAIN			BUTTERFLY VALVE			F
SEY NOTE DESIGNATOR AND NUMBER   FD FIRE DAMPER   SI   GLOBE VALVE - ANGLE PATTERN   RED	K-I					NEW EQUIPMENT			GATE VALVE			
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AP ACCESS PANEL RA RETURN AIR	•	POR	POINT OF REMOVAL	FS	FS	FIRE & SMOKE DAMPER	<u>M</u>		MOTORIZED 3-WAY CONTROL VALVE	—-G—		1
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MC MECHANICAL CONTRACTOR RF RELIEF AIR	GC		GENERAL CONTRACTOR	FA		FRESH AIR	<b></b> - √		NEEDLE VALVE	-HWS-		F
EC ELECTRICAL CONTRACTOR  FPC FIRE PROTECTION CONTROL  NIC NOT IN CONTRACT  NTS NOT TO SCALE  VCP VITRIFIED CLAY PIPE  C COMMON  NC NORMALLY CLOSED  NO NORMALLY OPEN    STRAINER W. PLUGGED BLOW OFF    VTI VENTURI  PRESSURE GAUGE AND GAUGE COCK-WATER    WATER TEMPERATURE SENSOR AND THERMOWELL    FLOW SWITCH    FLOW SWITCH    FLOW SWITCH    TW THERMOWELL	MC		MECHANICAL CONTRACTOR	RF		RELIEF AIR			AUTOMATIC AIR VENT	-HWR-		T
FPC FIRE PROTECTION CONTROL  NIC NOT IN CONTRACT  NTS NOT TO SCALE  VCP VITRIFIED CLAY PIPE  C COMMON  NC NORMALLY CLOSED  NO NORMALLY OPEN  S WATER TEMPERATURE SENSOR AND THERMOWELL  F FLOW SWITCH  PS PRESSURE SWITCH  FLOW SWITCH  FLOW SWITCH  PS PRESSURE SWITCH  THERMOWELL  THERMOWELL  THERMOWELL  THERMOWELL  THERMOWELL  THERMOWELL  THERMOWELL  THERMOWELL	СС		CONTROL CONTRACTOR				_ 호		MANUAL AIR VENT			
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VCP VITRIFIED CLAY PIPE  C COMMON  NC NORMALLY CLOSED  NO NORMALLY OPEN  S WATER TEMPERATURE SENSOR AND THERMOWELL  FLOW SWITCH  FLOW SWITCH  PS PRESSURE SWITCH  TW THERMOWELL	NIC		NOT IN CONTRACT					VTI	VENTURI			
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THERMOWELL  FLOW SWITCH  PS PRESSURE SWITCH  TW THERMOWELL	NC		NORMALLY CLOSED						THERMOMETER AND THERMOMELL			
PS PRESSURE SWITCH  TW THERMOWELL	NO		NORMALLY OPEN				S					
TW THERMOWELL							F		FLOW SWITCH			
							PS	PS	PRESSURE SWITCH			
—▶— DIRECTION OF FLOW							———	TW	THERMOWELL			
							-		DIRECTION OF FLOW	]		

#### **GENERAL NOTES:**

DESCRIPTION

EXISTING PIPING TO BE REMOVED

EXISTING PIPING TO REMAIN

WET SIDE CONT

PITCH DOWN

ELBOW DOWN

ELBOW UP

TEE UP

TEE DOWN

NEW PIPING

PIPE CAP OR PLUG

CONCENTRIC REDUCER

ECCENTRIC REDUCER

FLEXIBLE CONNECTION

CONDENSATE DRAIN

NATURAL GAS PIPING

CHEMICAL FEED LINE

MAKE-UP WATER LINE

CW | CULINARY COLD WATER

EQUIPMENT DRAIN

HEATING WATER SUPPLY

HEATING WATER RETURN

MECHANICAL INFORMATION IS NOT LIMITED TO THE MECHANICAL DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENTS INCLUDING DRAWINGS BY OTHER DISCIPLINES AND SPECIFICATIONS.

A - EACH DRAWING SHEET AND THE SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH ITEMS SHOWN AND NOTED ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN ALL PLACES. ITEMS IN SPECIFICATIONS OR DRAWINGS LISTED WHICH ARE DIFFERING IN EFFICIENCY OR QUALITY SHALL BE HELD TO THE GREATEST OF: EFFICIENCY, QUALITY OR GOVERNING CODE.

B - THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE INSTALLATION OF THE SYSTEMS ACCORDING TO THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS.

C - THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT WITH PROPER SERVICE ACCESS AND CLEARANCES ACCORDING TO MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL REVIEW SUPPLIERS BID PACKAGES FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS, SCHEDULES, AND DESIGN INTENT (ALL EQUIPMENT AND METHODS). THE CONTRACTOR SHALL REMOVE AND REINSTALL CORRECTLY AT HIS OWN EXPENSE ANY EQUIPMENT NOT IN COMPLIANCE.

D - THE CONTRACTOR SHALL CONSULT MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SIZES, METHODS, ACCESSORIES. AND CLEARANCES IN SPACE AVAILABLE PRIOR TO BIDDING PROJECT.

E - ANYTHING NOT CLEAR OR IN CONFLICT WILL BE EXPLAINED BY MAKING APPLICATION TO THE ENGINEER IN WRITING.

ANY AND ALL ALTERATIONS TO THE SYSTEM SHOWN MUST BE APPROVED BY THE ENGINEER IN WRITING BEFORE ANY CHANGES ARE

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATIONS.

G-4 THE WORKING DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND, OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR MECHANICAL EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL DRAWINGS. THE CONTRACTOR SHALL PROVIDE PROVISIONS FOR BLOCKOUTS OR CORE DRILLS THROUGH STRUCTURE. IF REQUIRED BY HIS CONTRACT.

THE INSTRUCTION TO "PROVIDE" ALSO INCLUDES INSTALLATION.

MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL SMOKE AND FIRE DAMPERS AS REQUIRED BY LOCAL CODES AND AUTHORITIES.

SHEET METAL DUCT SIZES SHOWN ON DRAWINGS ARE FREE AREA DIMENSIONS.

PROVIDE TURNING VANES IN ALL ELBOWS OF RECTANGULAR DUCT. IF REQUIRED BY NEW CONNECTION TO NEW ROOF TOP UNIT.

THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY IN HANDLING AND DISPOSING OF REFRIGERANTS, OILS, ETC. ALL SUCH MATERIALS SHALL BE HANDLED, DISPOSED, AND USED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS.

THE MECHANICAL CONTRACTOR SHALL VERIFY MOTOR VOLTAGES WITH THE ELECTRICAL DRAWING BEFORE ORDERING MOTORIZED **EQUIPMENT AND CONTROLS.** 

C.F.M. LISTED IS ACTUAL AIR.

SUPPLIERS SHALL REVIEW ALL DRAWINGS AND THE SPECIFICATIONS PRIOR TO SUBMITTING PRICES TO THE CONTRACTOR. ALL QUESTIONS AND DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BIDDING.

CONTRACTOR SHALL THOROUGHLY REVIEW AND SIGN SUBMITTALS FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS PRIOR TO ENGINEERS REVIEW. SUPPLIERS SHALL HIGHLIGHT OR MARK ALL INFORMATION REQUIRED TO SHOW COMPLIANCE TO THE SPECIFICATIONS. ALL REQUESTED EXCEPTIONS TO THE SPECIFICATIONS, OR SCHEDULES SHALL BE CLEARLY NOTED AND EXPLAINED. SUBMITTAL REVIEW AND ACCEPTANCE IS FOR DESIGN CONCEPT ONLY, AND DOES NOT AT ANY TIME RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO MEET SPECIFICATIONS, CAPACITIES, OR DESIGN INTENT.

ALL MECHANICAL SHALL BE INSTALLED AND CONFORM TO THE 2006 EDITION OF THE IMC AND IPC WITH UTAH ANNOTATIONS AND REQUIREMENTS.

THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE DRAINING DOWN AND REFILLING OF ALL SYSTEMS NECESSARY TO COMPLETE THE WORK OUTLINED BY THIS PROJECT. THIS INCLUDES PROVIDING THE REQUIRED CHEMICAL TREATMENT WHEN REFILLING THE SYSTEM.

CONTRACTOR SHALL CONTRACT WITH A DESIGN/BUILD ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL REQUIREMENTS. ALL ELECTRICAL SHALL BE INSTALLED AND CONFORM TO THE LATEST EDITION OF THE NEC WITH UTAH ANNOTATIONS AND REQUIREMENTS.

#### State of Utah Department of Administrative Services

Division of Facilities



Construction & Management 4110 State Office Building Salt Lake City, Utah 84114 Phone: (801) 538 - 3018 Fax: (801) 538 - 3267

Internet: http://www.dfcm.state.ut.us

**CONSULTANTS** 



**WHW** ENGINEERING INC. ROFESSIONAL MECHANICAL ENGINEERING 1354 East 3300 South Suite 200 SALT LAKE CITY, UTAH 84106 (801)466-4021, FAX 466-8536

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PROJECT NAME & ADDRESS

# **DEPARTMENT OF ENVIRONMENTAL QUALITY**

**BLDG #2 HVAC SYSTEM UPGRADE DFCM PROJECT # 06170310** 

> 1950 WEST 168 NORTH SALT LAKE CITY, UT 84114

MARK	DATE	REVISION
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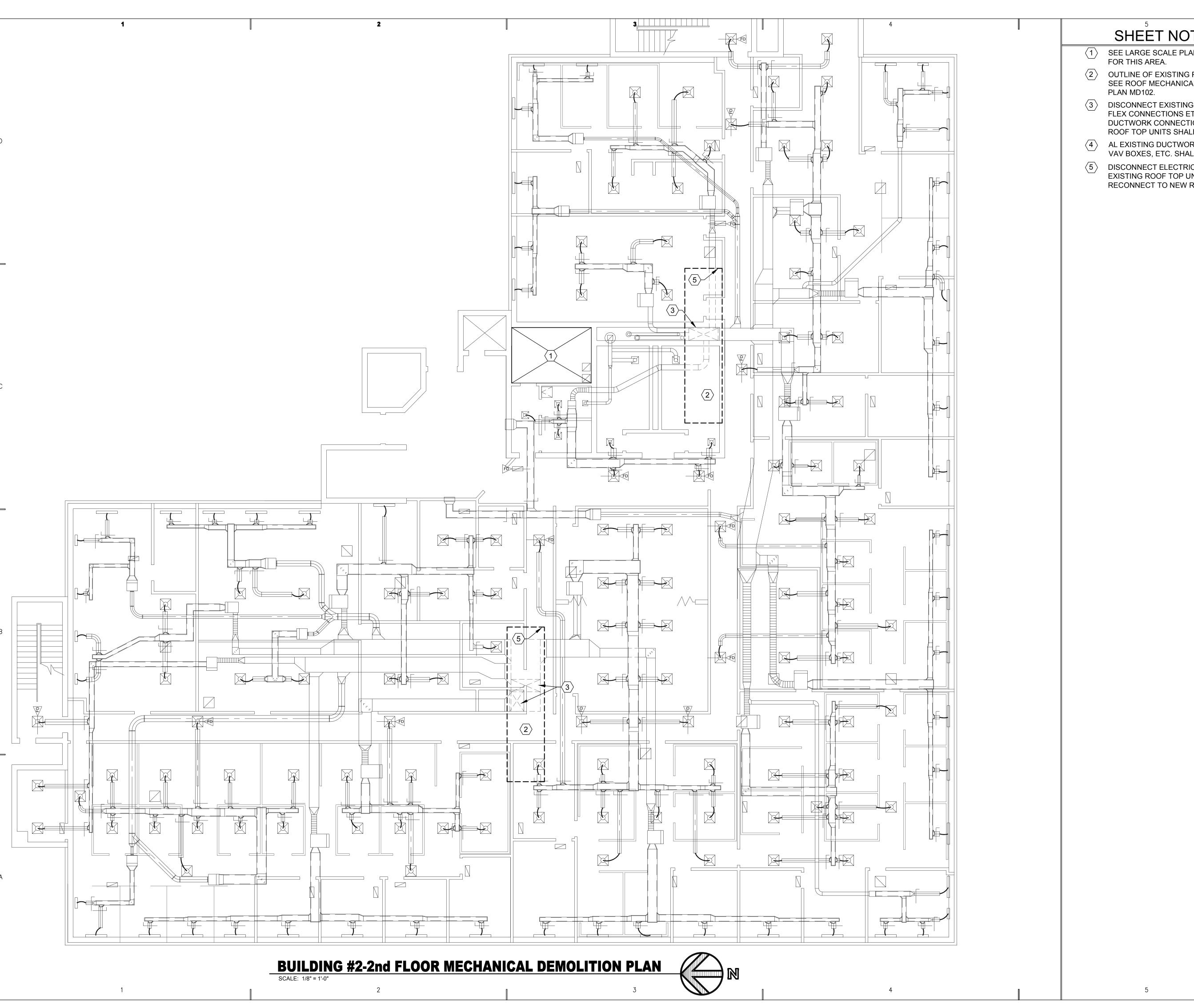
PROJECT MANAGER: SLW DRAWN BY: STAFF CHECKED BY: WMP DATE: 03/12/07 WHW JOB NO.: 06066 SHEET TITLE

WINWARD M.\ PACKER

MECHANICAL GENERAL NOTES AND LEGEND

SHEET NO.

M001



# SHEET NOTES:

- SEE LARGE SCALE PLAN SHEET MD401
- OUTLINE OF EXISTING ROOF TOP UNIT. SEE ROOF MECHANICAL DEMOLITION
- DISCONNECT EXISTING S.A. DUCTWORK, FLEX CONNECTIONS ETC. ALL DUCTWORK CONNECTIONS TO EXISTING ROOF TOP UNITS SHALL BE REMOVED.
- AL EXISTING DUCTWORK, DIFFUSERS, VAV BOXES, ETC. SHALL REMAIN AS-IS.
- DISCONNECT ELECTRICAL FROM EXISTING ROOF TOP UNITS. MODIFY TO RECONNECT TO NEW ROOF TOP UNITS.

# State of Utah

Department of Administrative Services



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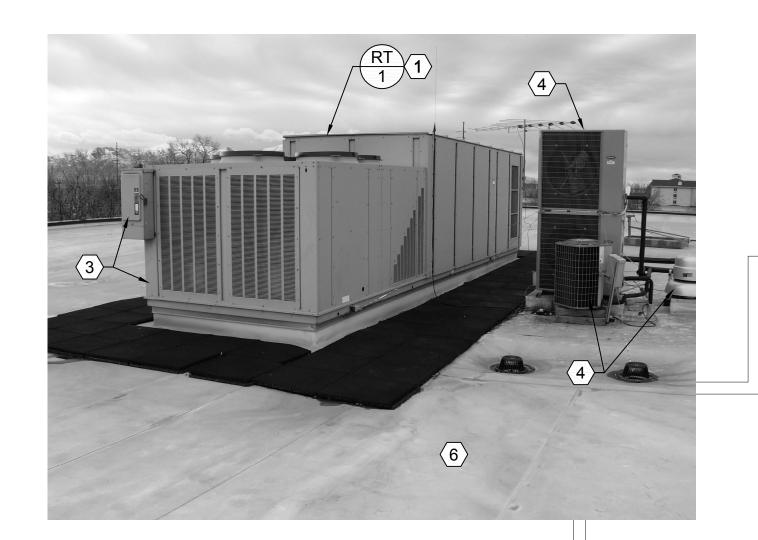
03/12/07 WHW JOB NO.: 06066

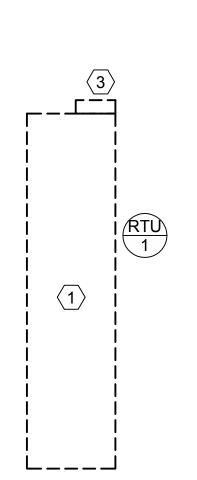
WINWARD M. PACKER

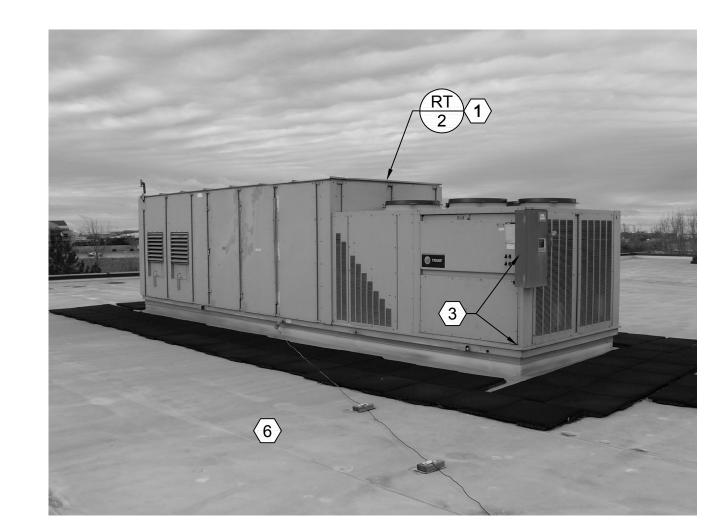
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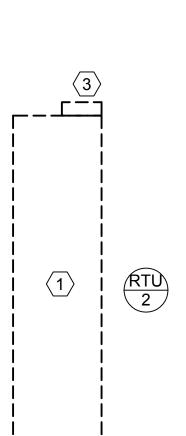
2ND FLOOR MECHANICAL **DEMOLITION PLAN** 

MD101

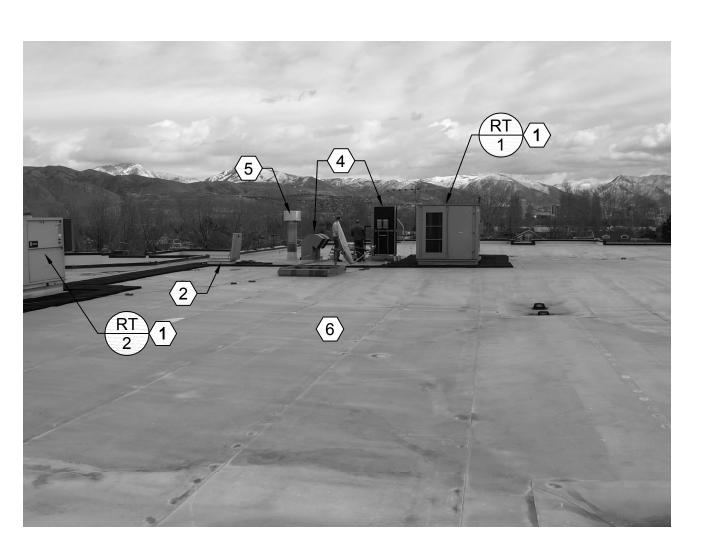








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# SHEET NOTES:

- (1) REMOVE EXISTING ROOF TOP UNITS, DUCTWORK CONNECTIONS, AND ALL ASSOCIATED ITEMS. EXISTING ROOF CURB SHALL REMAIN AND BE ADAPTED FOR THE NEW ROOF TOP UNIT.
- $\langle 2 \rangle$  EXISTING ROOF HATCH ACCESS.
- (3) ELECTRICAL DISCONNECTS SHALL BE REMOVED. ELECTRICAL SUPPLY SHALL BE DISCONNECTED FROM EXISTING ROOF D TOP UNITS BUT SAVED FOR NEW UNITS.
- (4) EXISTING EQUIPMENT SHALL REMAIN.
- (5) EXISTING BOILER STACK SHALL REMAIN AND BE REUSED.
- (6) PROTECT SINGLE PLY ROOF DURING DEMOLITION, ROOT TRAFFIC, DRAGGING EQUIPMENT, MATERIALS, ETC. ALL DAMAGE ROOFING SHALL BE PATCHED REPAIRED BY ORIGINAL ROOFING CONTRACTOR TO MAINTAIN WARRANTEE.

# State of Utah

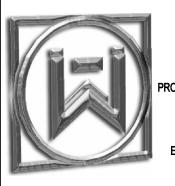
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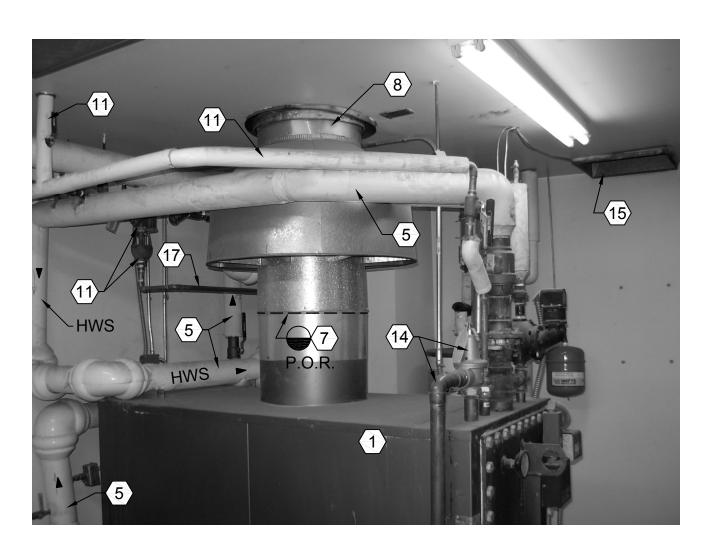
06066

ROOF MECHANICAL DEMOLITION PLAN

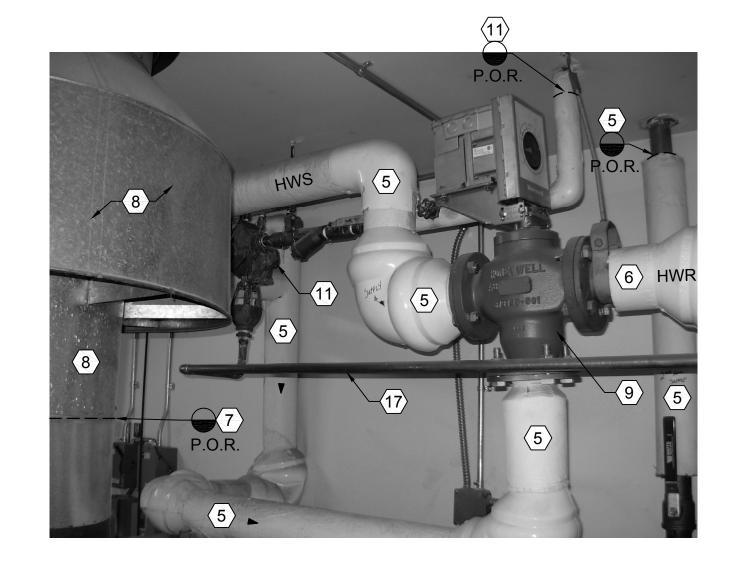
MD102

**BUILDING #2-ROOF MECHANICAL DEMOLITION PLAN** 

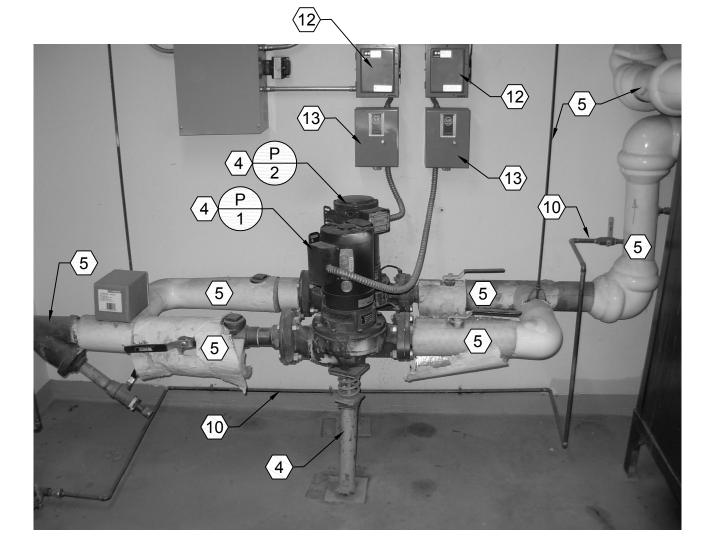




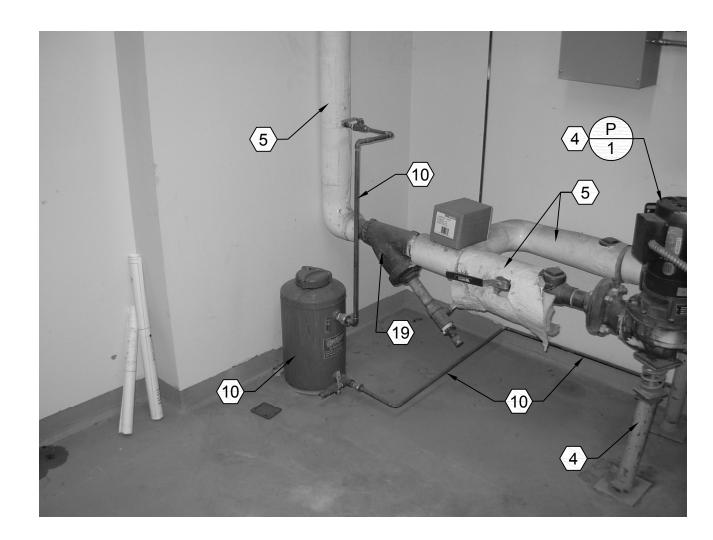
BOILER AND FLUE DEMOLITION SCALE: NONE



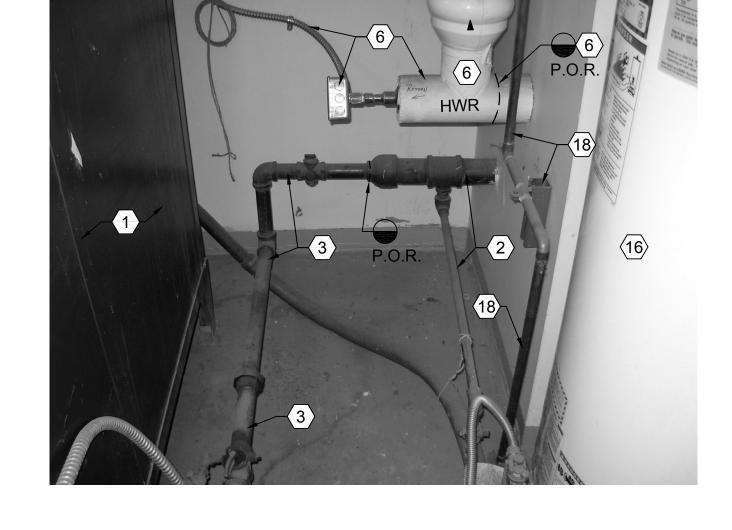
3 WAY MIXING VALVE PIPING DEMOLITION SCALE: NONE



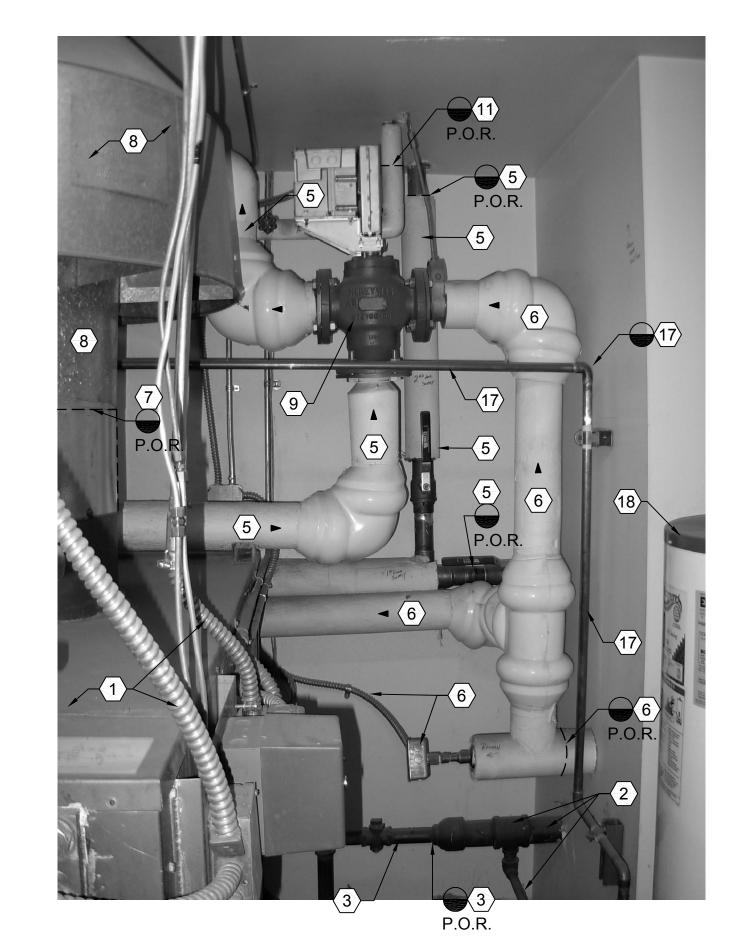
HOT WATER PUMPS DEMOLITION SCALE: NONE



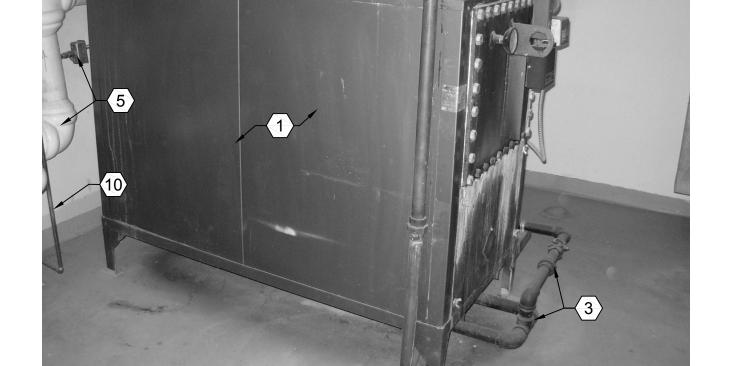
CHEMICAL POT FEEDER AND PIPING DEMOLTION



GAS PIPING DEMOLITION SCALE: NONE



HOT WATER SUPPLY AND RETURN PIPING DEMOLITON SCALE: NONE



**BOILER DEMOLITION** SCALE: NONE

# SHEET NOTES:

- REMOVE BOILER AND ALL ASSOCIATED ITEMS, PIPING, AND EQUIPMENT.
- EXISTING 3" GAS PIPING AND GAS PIPING TO CULINARY HOT WATER HEATER SHALL REMAIN.
- REMOVE EXISTING GAS LINE TO GAS TRAIN AND BOILER.
- REMOVE EXISTING PUMPS AND ASSOCIATED VALVES, ETC.
- REMOVE EXISTING HWS, VALVES, FITTINGS, HANGERS ETC.
- REMOVE EXISTING HWR, VALVES,
- FITTINGS, HANGERS ETC. REMOVE EXISTING STACK TO POINT
- EXISTING STACK THROUGH CEILING AND ROOF SHALL REMAIN.
- **EXISTING 3-WAY AUTO VALVE SHALL BE** REMOVED AND SAVED FOR CONNECTION TO NEW PIPING.
- REMOVE EXISTING CHEMICAL POT FEEDER, PIPING AND VALVES.
- REMOVE MAKE-UP WATER, BACK FLOW PREVENTER, VALVES AND PIPING TO POINT SHOWN.
- REMOVE EXISTING PUMP DISCONNECTS.
- REMOVE EXISTING PUMP STARTERS.
- REMOVE EXISTING RELIEF VALVE AND
- 18"x18" HIGH COMBUSTION AIR OPENING.
- EXISTING CULINARY HOT WATER HEATER C SHALL REMAIN.
- REMOVE DRAIN LINE, SUPPORTS ETC.
- TS SECTION OF DRAIN PIPING SHALL
- REMOVE EXISTING STRAINER.

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#### PROJECT NAME & ADDRESS

# **DEPARTMENT OF ENVIRONMENTAL QUALITY**

**BLDG #2 HVAC SYSTEM UPGRADE DFCM PROJECT # 06170310** 

1950 WEST 168 NORTH SALT LAKE CITY, UT 84114

MARK	DATE	REVISION

PROJECT MANAGER: SLW DRAWN BY: STAFF

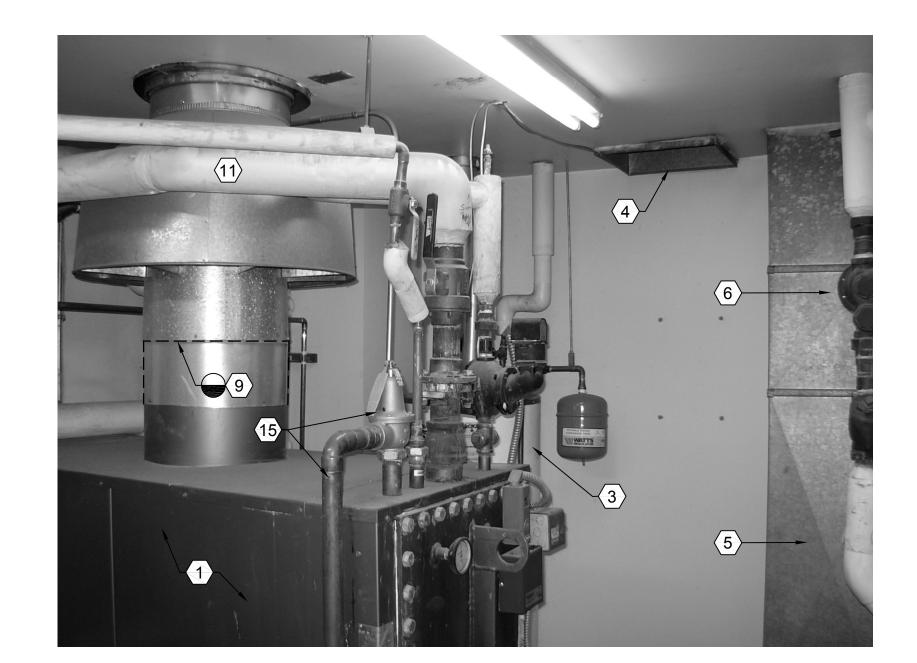
03/12/07 WHW JOB NO.:

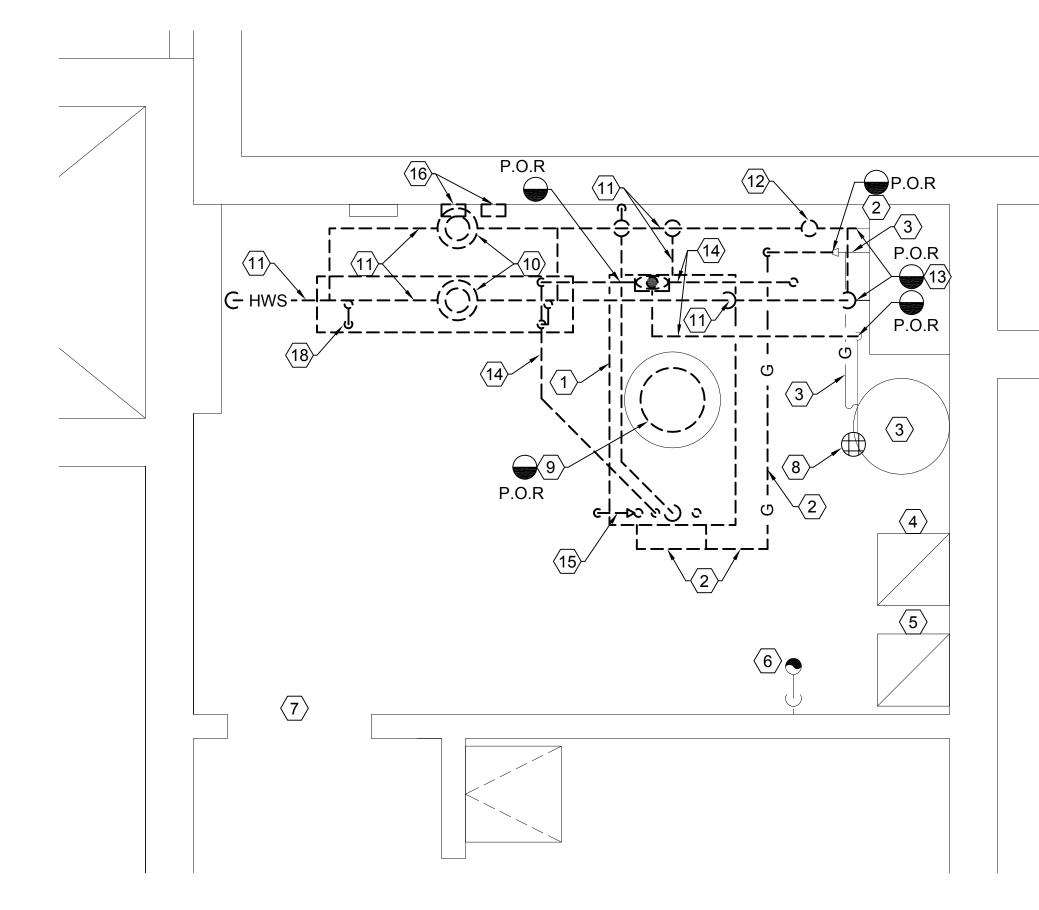
06066

BOILER ROOM DEMOLITION

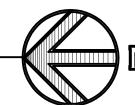
**DETAILS** 

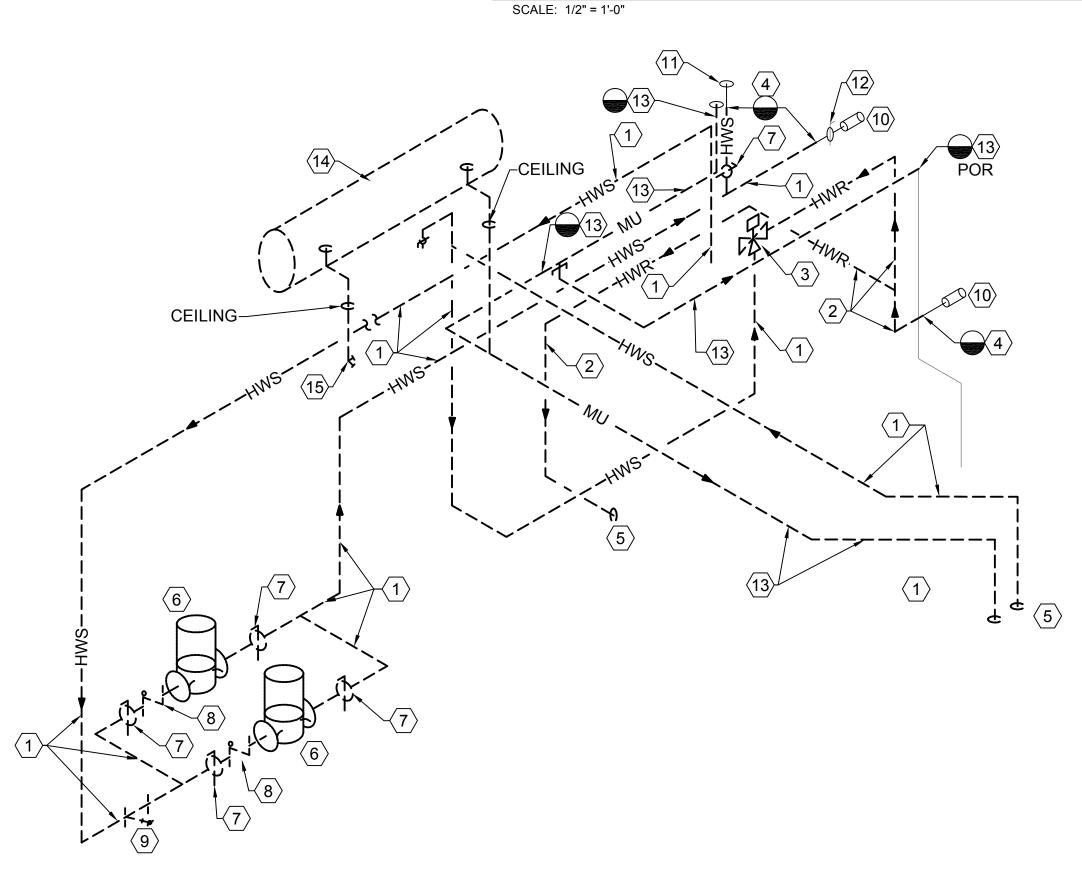
MD103





# **BUILDING #2-LARGE SCALE BOILER ROOM DEMOLITION PLAN**





# **EXISTING HOT WATER PIPING DEMOLITION ISOMETRIC**

# SHEET NOTES:

- REMOVE EXISTING GAS FIRED HOT WATER BOILER COMPLETE WITH ALL PIPING CONNECTIONS, STACK CONNECTION, ELECTRICAL AND CONTROLS.
- REMOVE EXISTING GAS TRAIN,
- CONTROLS ETC. BACK TO REDUCER. EXISTING CULINARY GAS FIRED HOT WATER HEATER AND GAS LINE SHALL
- EXISTING HIGH 18"x18" COMBUSTION AIR DUCT SHALL REMAIN.
- EXISTING LOW 18"x18" COMBUSTION AIR DUCT SHALL REMAIN.
- EXISTING CULINARY DOMESTIC WATER VERTICAL PRV STATION AND BUILDING SHUTOFF SHALL REMAIN.
- USE EXISTING 3'-0" DOOR FOR ROOM ACCESS AND EQUIPMENT REMOVAL.
- EXISTING FLOOR DRAIN SHALL REMAIN
- DISCONNECT BEFORE DRAFT DIVERTER. REUSE STACK FOR RECONNECTION TO NEW BOILER.
- REMOVE EXISTING PUMPS, DISCONNECTS, STARTERS ETC.
- REMOVE EXISTING HOT WATER PIPING SUPPLY, RETURN MIXING ETC. INCLUDING VALVES, STRAINERS ETC.
- REMOVE 2" HWS TO 2ND FLOOR 10" BELOW BOILER CEILING FOR CONNECTION TO NEW HWS PIPING.
- LEAVE A MINIMUM OF 6" FOR CONNECTION TO NEW PIPING. SEE SHEET<sup>C</sup>
- REMOVE WATER MAKE UP TO SYSTEM INCLUDING BACK FLOW PREVENTER, PRV, AND ALL VALVES.
- REMOVE PRESSURE RELIEF VALVE, PIPING HANGERS ETC. TO FLOOR DRAIN.
- REMOVE EXISTING PUMP DISCONNECTS AND PUMP STARTERS (ONE UNDERNEATH THE OTHER), C/W CONDUIT, FLEX CONDUIT AND WIRING.
- REMOVE EXISTING COMPRESSION TANK SUPPORTS, PIPING, ETC. LOCATED IN CEILING SPACE.
- REMOVE EXISTING DRAIN PIPING AND HOSE BIBB. PATCH CEILING OPENING LEFT BY THE REMOVAL OF PIPNG.

#### ISOMETRIC SHEET NOTES:

- REMOVE EXISTING HOT WATER SUPPLY PIPING, HANGERS, VALVES ETC.
- REMOVE EXISTING HOT WATER RETURN PIPING, HANGERS, VALVES ETC.
- **REMOVE EXISTING 3-WAY CONTROL** VALVE AND SAVE FOR NEW INSTALLATION.
- REMOVE EXISTING PIPING TO THIS POINT AND CONNECT NEW PIPING AT THIS LOCATION.
- BOILER CONNECTIONS.
- REMOVE EXISTING PUMPS.
- REMOVE EXISTING BALL VALVES.
- REMOVE EXISTING CHECK VALVES.
- REMOVE EXISTING STRAINER.
- PIPING THROUGH WALL SHALL REMAIN.
- PIPING THROUGH CEILING SHALL REMAIN.
- EXISTING BALL VALVES SHALL REMAIN. REMOVE EXISTING MAKE-UP WATER
- BACK FLOW PREVENTER, PRV, DRAIN, REMOVE EXISTING COMPRESSION TANK, SUPPORTS, PIPING, ETC. LOCATED IN

PIPING INCLUDING BALL VALVES, PIPING,

CEILING SPACE. REMOVE EXISTING DRAIN PIPING AND HOSE BIBB. PATCH CEILING OPENING LEFT BY THE REMOVAL OF PIPNG.

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#### CONSULTANTS



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PROJECT NAME & ADDRESS

## **DEPARTMENT OF ENVIRONMENTAL QUALITY**

**BLDG #2 HVAC SYSTEM UPGRADE DFCM PROJECT # 06170310** 

# 1950 WEST 168 NORTH SALT LAKE CITY, UT 84114

MARK	DATE	REVISION

/WINWARD M.\

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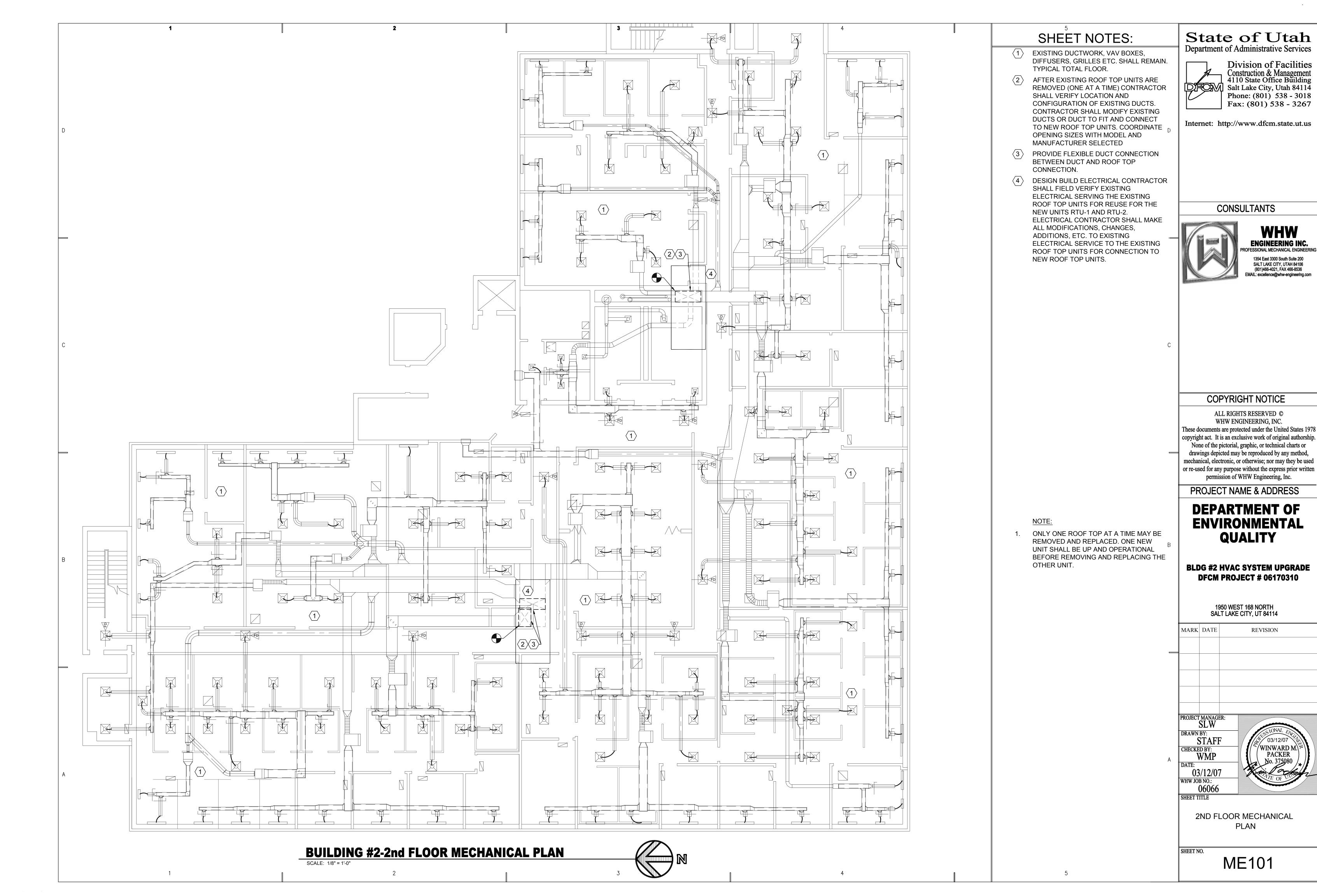
PROJECT MANAGER: SLW DRAWN BY: STAFF

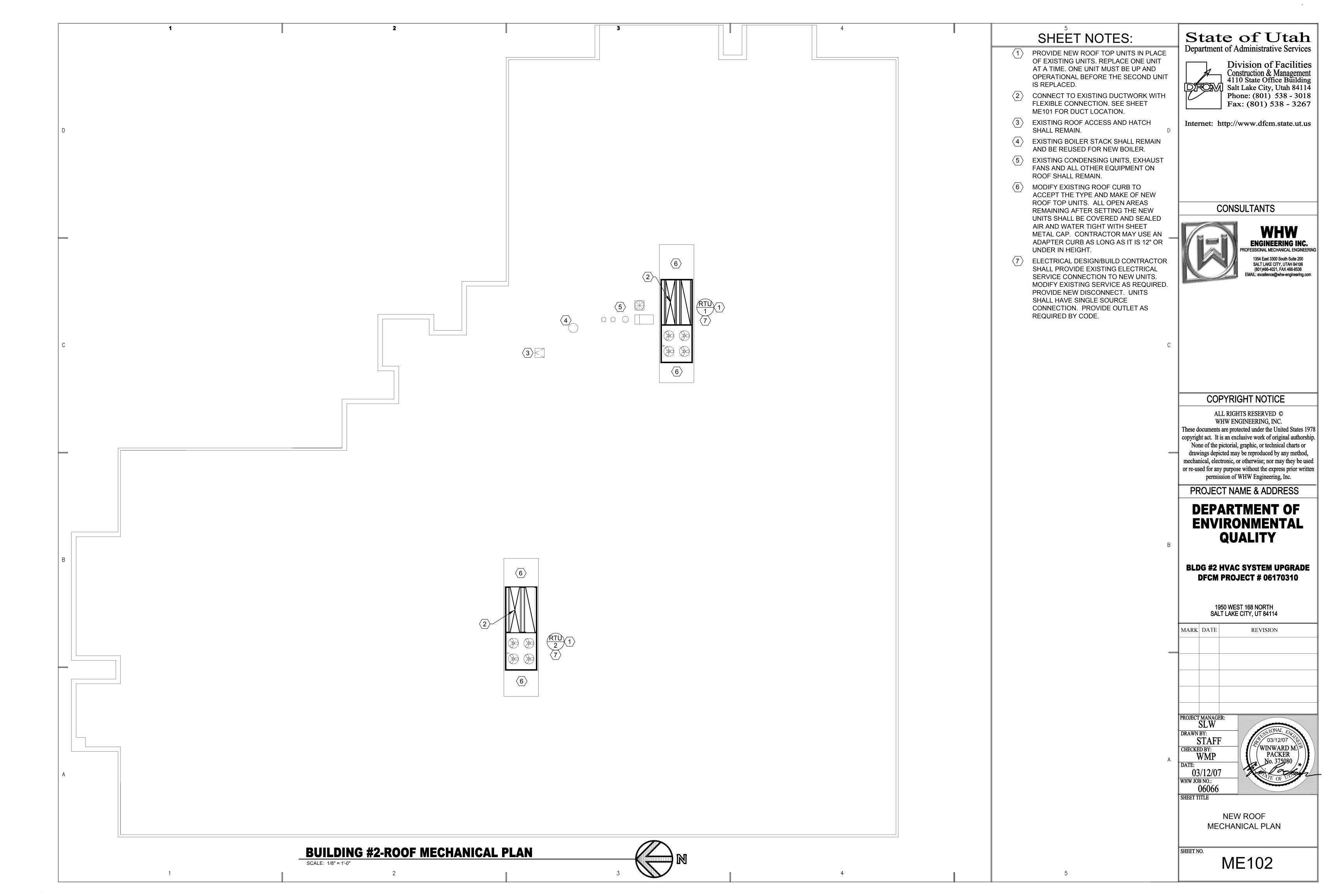
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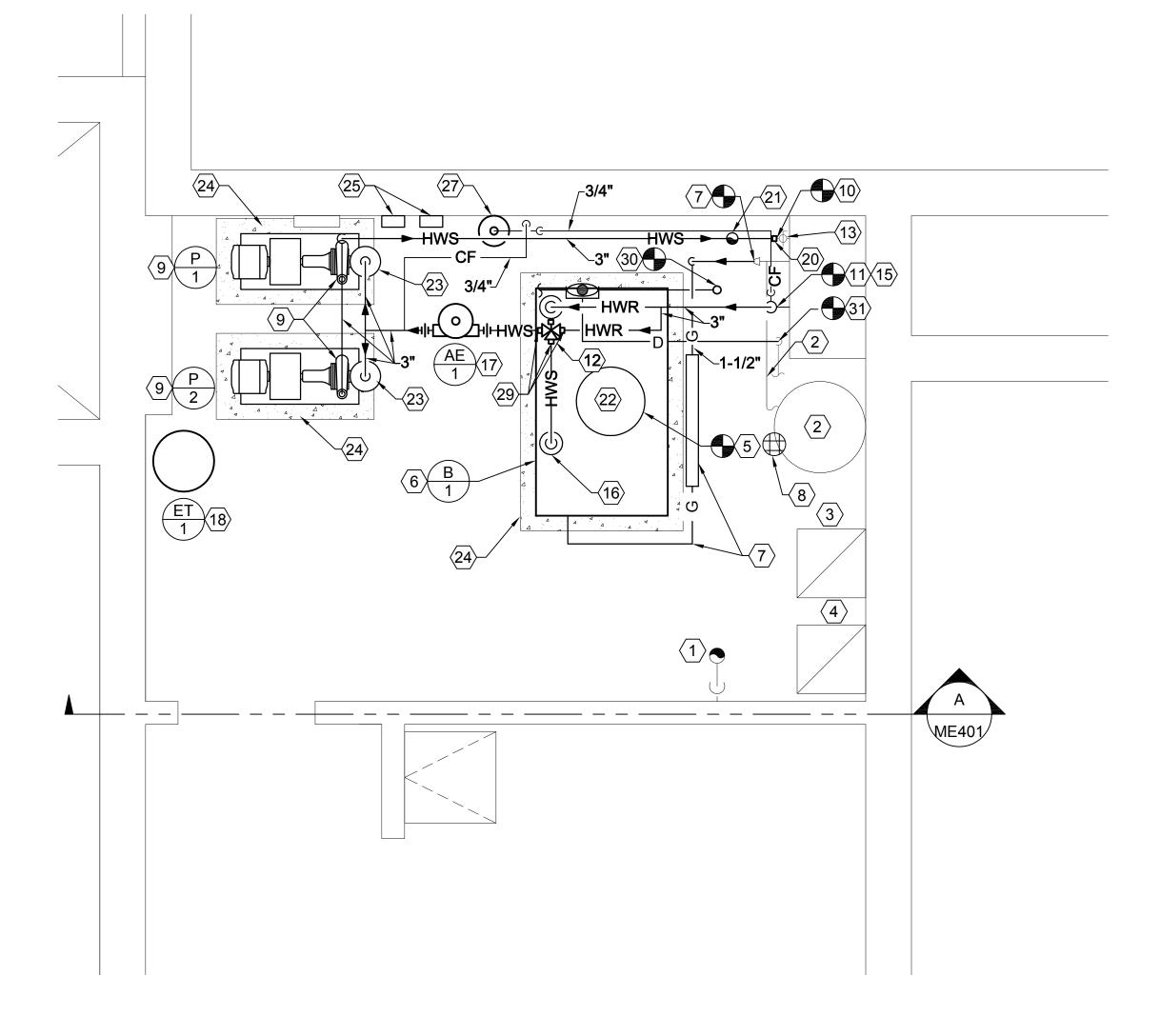
06066 SHEET TITLE

> LARGE SCALE BOILER ROOM **DEMOLITION PLAN**

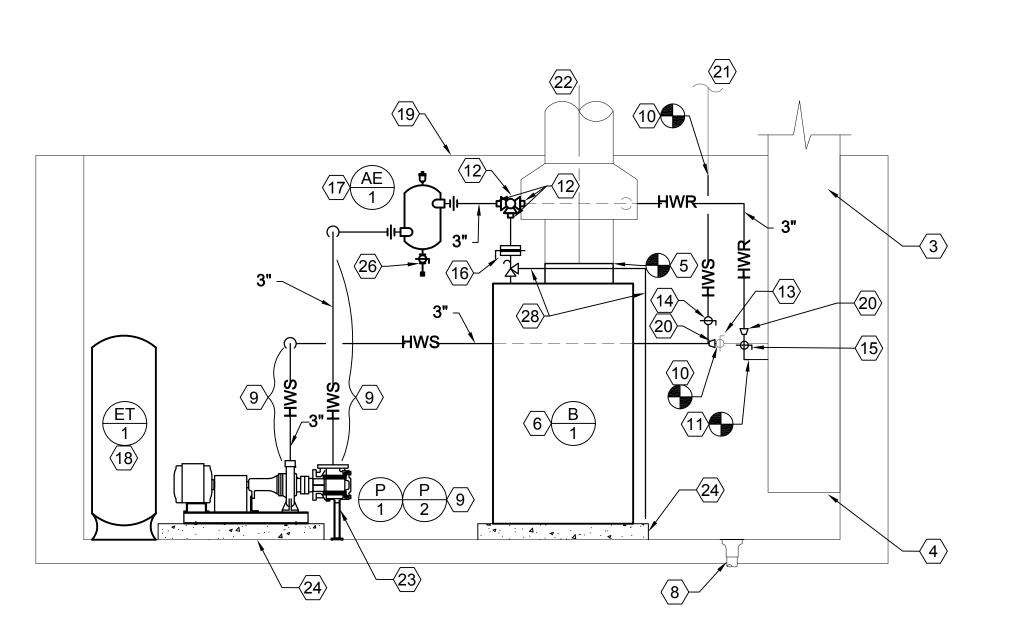
MD401







**BUILDING #2-LARGE SCALE BOILER ROOM PLAN** 



**BOILER ROOM ELEVATION** 

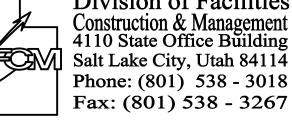


# SHEET NOTES:

- EXISTING CULINARY DOMESTIC WATER VERTICAL PRV STATION AND BUILDING SHUT-OFF.
- EXISTING CULINARY GAS FIRED HOT WATER HEATER AND GAS LINE.
- EXISTING HIGH 18"x18" COMBUSTION AIR
- EXISTING LOW 18"x18" COMBUSTION AIR DUCT SHALL REMAIN.
- NEW 16 "Ø FLUE. RE-CONNECT BEFORE DRAFT DIVERTER. VERIFY SIZE.
- NEW GAS FIRED HOT WATER BOILER COMPLETE WITH ALL PIPING CONNECTIONS, STACK CONNECTION, ELECTRICAL AND CONTROLS. SEE FLOW SHEET ME701.
- NEW CSD-1 GAS TRAIN, CONTROLS ETC. RE-CONNECT AT REDUCER. SEE DETAIL C5/ME501.
- EXISTING FLOOR DRAIN.
- NEW PUMPS, DISCONNECTS, STARTERS, ETC. SEE PUMP PIPING DETAIL C3/ME501.
- **RE-CONNECT INTO EXISTING HWS AT** THIS APPROXIMATE POINT.
- RE-CONNECT INTO EXISTING HWR AT THIS APPROXIMATE POINT.
- RE-USE EXISTING 3-WAY MIXING VALVE.
- RE-USE EXISITNG 2" BALL VALVE.
- RE-USE EXISTING 2" BALL VALVE SAVED FROM DEMOLITION.
- PROVIDE NEW 2" BALL VALVE ON HWR.
- PROVIDE NEW 3" BUTTERFLY VALVE WITH TWO 125# FLANGES.
- PROVIDE NEW 3" AIR ELIMINATOR. SEE DETAIL B1/ME501.
- PROVIDE NEW FLOOR MOUNTED EXPANSION TANK. SEE DETAIL A3/ME501.
- EXISTING CEILING 8'-0" FROM FLOOR.
- PROVIDE 3"x2" CONCENTRIC REDUCERS.
- EXISTING 2" HWS TO 2ND FLOOR SHALL
- REMAIN. **EXISTING FLUE THRU-ROOF SHALL**
- REMAIN.
- PROVIDE NEW 3" SYSTEM- 2" PUMP SUCTION DIFFUSERS.
- 4" THICK CONCRETE PAD.
- PROVIDE NEW PUMP DISCONNECTS AND STARTERS. STARTERS SHALL BE THREE POSITION ON-OFF-AUTO WITH LIGHTS.
- AIR ELIMINATOR DRAIN LINE, VALVE AND HOSE CONNECTION.
- CHEMICAL POT FEEDER AND PIPING. SEE B DETAIL B4/ME501.
- RELIEF VALVE PROVIDED BY BOILER MANUFACTURER. EXTEND RELIEF LINE FULL SIZE TO FLOOR AS SHOWN. ONLY ONE 90° ELL IS ALLOWED.
- PROVIDE 3" X 2-1/2" REDUCERS.
- CONNECT NEW COLD WATER MAKE-UP PIPING TO EXISTING AT ELBOX OUTLET AND EXTEND TO NEW BACKFLOW PREVENTER AND PRV STATION. SEE DETAIL A1 ON ME501 AND HOT WATER FLOW SHEET FOR PIPING REQUIREMENTS.
- CONNECT NEW TYPE L COPPER DRAIN LINE FROM NEW BACKFLOW PREVENTER AT THIS LOCATION.

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#### PROJECT NAME & ADDRESS

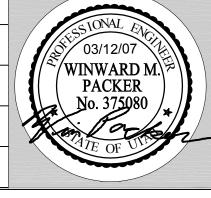
# **DEPARTMENT OF ENVIRONMENTAL QUALITY**

**BLDG #2 HVAC SYSTEM UPGRADE DFCM PROJECT # 06170310** 

1950 WEST 168 NORTH SALT LAKE CITY, UT 84114

MARK	DATE	REVISION

PROJECT MANAGER: SLW DRAWN BY: STAFF CHECKED BY:



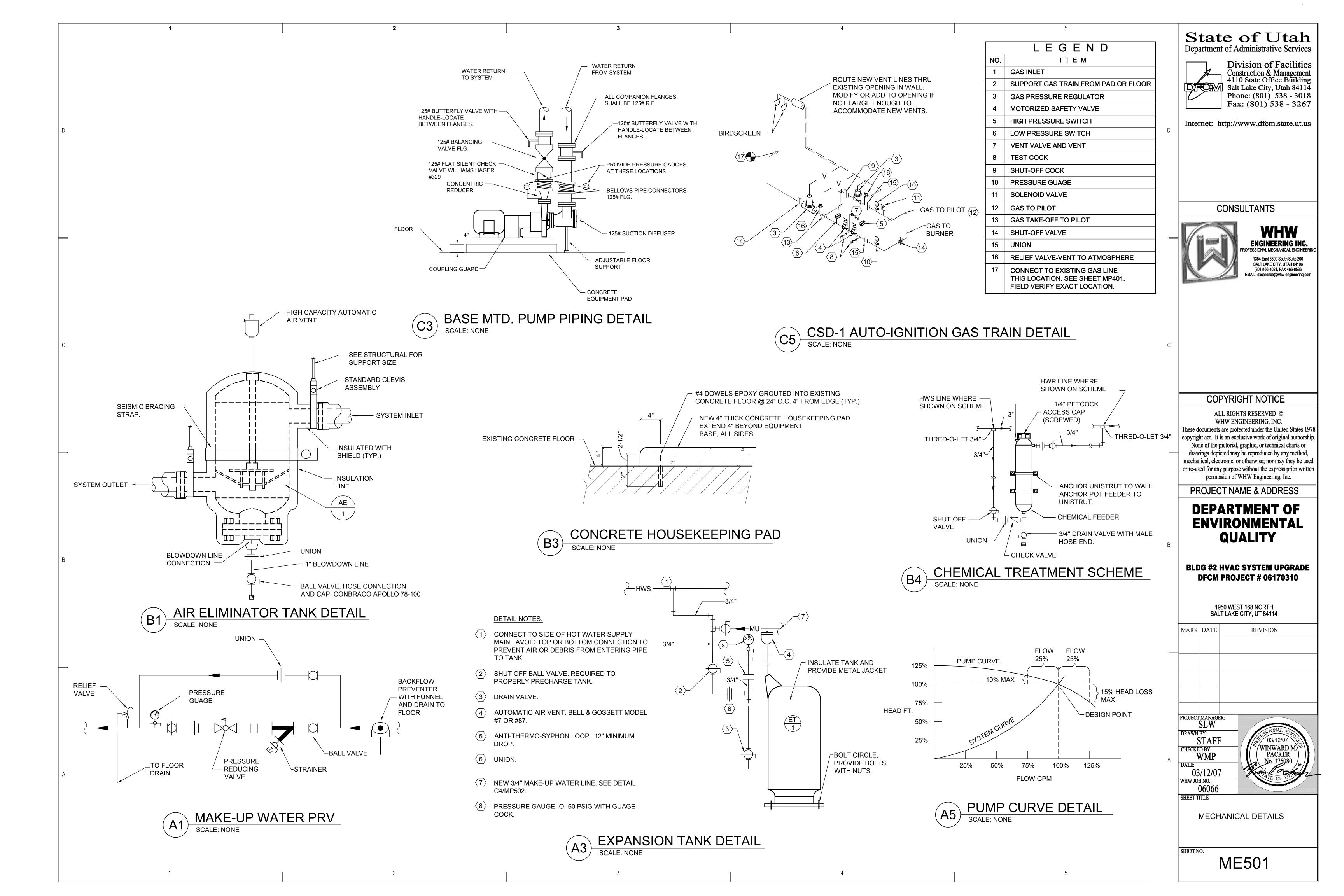
06066 SHEET TITLE

WHW JOB NO.:

LARGE SCALE BOILER ROOM PLAN

ME401





### ROOFTOP AIR CONDITIONER SCHEDULE

	MANUFACTURER &		E.S.P. IN		COOLING					ELECTRICAL					EER/		OPER.	SCHEDULE	
SYMBOL	MODEL NUMBER	SA CFM OSA CFM	W.G.	AMB. AIR (DB)	AMB. AIR (WB)	MIN. TOTAL MBH	V - Ø - Hz	COMPRESSOR #	COMPRESSOR RLA (EACH)	COMPRESSOR LRA (EACH)	EVAP BLOWER HP	POWER EXHAUST FLA	MCA	MOCP	SEER	IPLV	WT. (LBS) COMMENTS	NOTES	
RTU 1	CARRIER 50AK	20,000 SEE NOTES	1.5	95	65	555	460/3/60	4	16, 16, 16, 22.4	120, 120, 120, 175	30	12.6	146	175	9.5	9.7	6000	1,2,3,4,5	
RTU 2	CARRIER 50AK	20,000 SEE NOTES	1.5	95	65	555	460/3/60	4	16, 16, 16, 22.4	120, 120, 120, 175	30	12.6	146	175	9.5	9.7	6000	1,2,3,4,5	

- 1. E.S. P. DOES NOT INCLUDE LOSSES THROUGH ACCESSORIES.
- 2. RATED MINIMUM INPUT AT SEA LEVEL.
- 3. PROVIDE ONE 15 AMP, 120 VOLT, DUPLEX GFCI SERVICE OUTLET.
- 4. BELT DRIVE UNIT
- 5. PROVIDE CONTROLS TO COMMUNICATE WITH CO2 MONITORS TO MODULATE OUTSIDE AIR DAMPERS.

	AIR	ELIMINATO	R SCHE	EDULE		
SYMBOL	CAPACITY GPM	MAX PRESSURE DROP FT.	INLET / OUTLET SIZE	FLOOD WEIGHT LBS	MAKE & MODEL	SCHEDULE NOTES
AE 1	75	0.3	3"	186	BELL & GOSSETT RL3	1

1. FOR OTHER APPROVED MANUFACTURERS SEE SPECIFICATIONS.

	EXPANSION TANK SCHEDULE											
SYMBOL	ACCEPTANCE VOLUME/ TANK VOLUME GAL.	LENGTH	DIAMETER	OPERATION WEIGHT/ FLOOD WEIGHT (LBS)	COMMENTS	SCHEDULE NOTES						
ET 1	22.6/44.4	56"	16-1/4"	146/517	BELL & GOSSETT D-80V	1						
1. FOR OTH	HER APPROVED MANU	JFACTURERS S	SEE SPECIFIC	ATIONS.	•							

## PUMP SCHEDULE

SYMBOL	TYPE	GPM	FT. HEAD	RPM	SUCTION SIZE	DISCHARGE SIZE		MOTOR		SIZE	SERVICE	MANUFACTURER	SCHEDULE NOTES
					SIZE	SIZE	V - Ø - Hz	HP	RPM				NOTES
P 1	BASE MOUNTED END SUCTION	75	50	1750	2"	1.5"	208/230/3/60	3	1750	1-1/2AC	HEATING HOT WATER	BELL & GOSSETT 1510	1,2
P 2	BASE MOUNTED END SUCTION	75	50	1750	2"	1.5"	208/230/3/60	3	1750	1-1/2AC	HEATING HOT WATER	BELL & GOSSETT 1510	1,2

- 1. ALL PUMPS SHALL BE SIZED IN THE FLAT PART OF THE CURVE. SEE DETAIL.
- 2. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.

# BOILER SCHEDULE

SYMBOL	MBH INPUT	МВН ОИТРИТ	WATER	R TEMP	GPM	DELTA P FT	FAN MOTOR	OPERATION WEIGHT LBS	MAKE AND MODEL#	SCHEDULE NOTES
			IN	OUT			WOTOK	WEIGHT EBS	522.	
B 1	1,500	1,200	160°F	180°F	75		N/A	2,300	BRYAN CLM-150-W	1,2,3,4

- 1. BOILER RATINGS ARE FOR SEA LEVEL.
- 2. SEE SPECIFICATION FOR OTHER APPROVED MANUFACTURERS.
- 3. VERIFY FLUE SIZING AND MATERIAL WITH EACH BOILER MANUFACTURER AND INSTALL ACCORDINGLY.
- 4. PROVIDE 120V CONTROL CIRCUIT.

# State of Utah Department of Administrative Services



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PROJECT NAME & ADDRESS

# **DEPARTMENT OF ENVIRONMENTAL QUALITY**

**BLDG #2 HVAC SYSTEM UPGRADE DFCM PROJECT # 06170310** 

1950 WEST 168 NORTH SALT LAKE CITY, UT 84114

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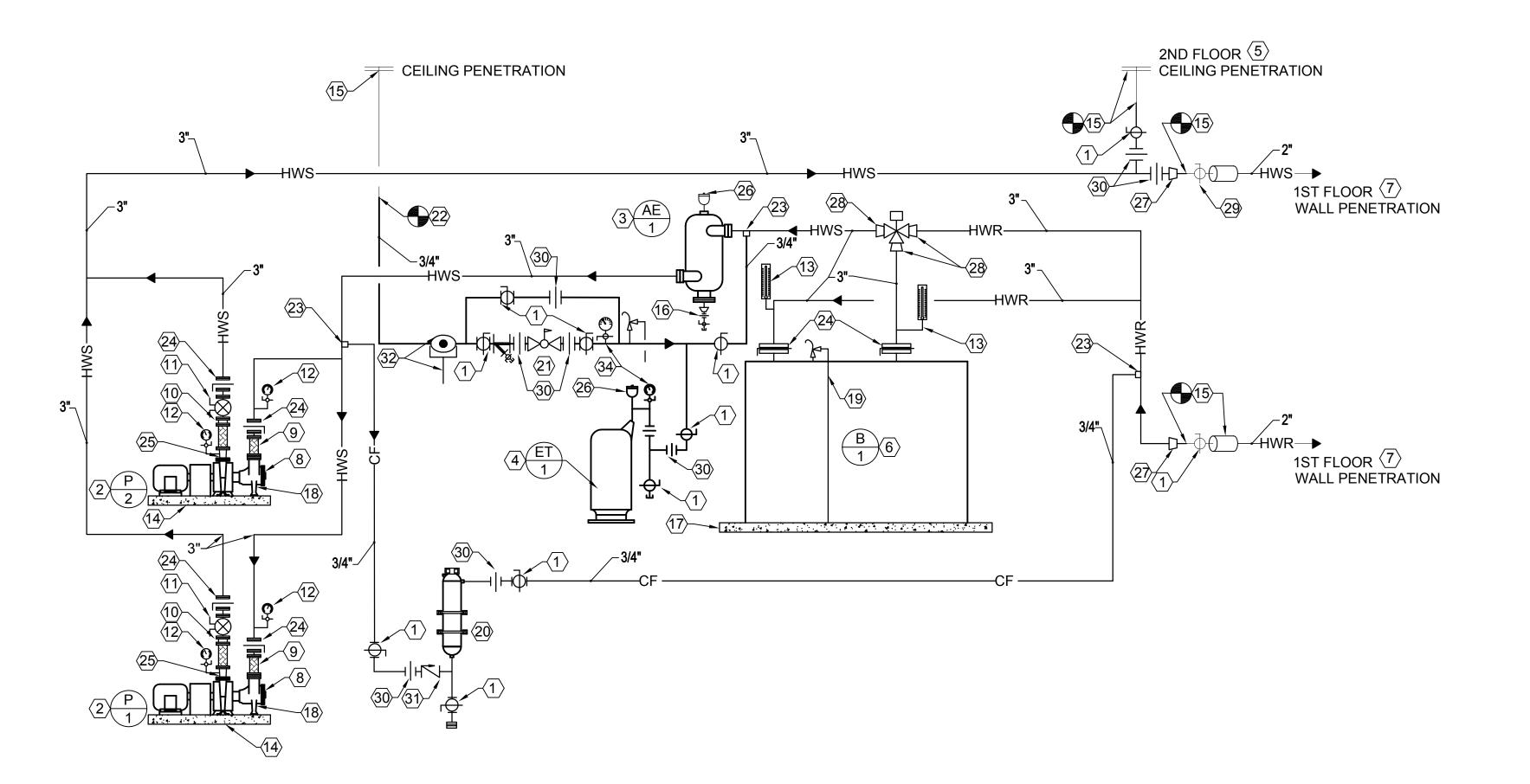
PROJECT MANAGER: SLW DRAWN BY: STAFF

03/12/07 WHW JOB NO.: 06066

SHEET TITLE

MECHANICAL SCHEDULES

ME601



**NEW HOT WATER FLOW SHEET** NO SCALE

#### SHEET NOTES:

- 1 PROVIDE LINE SIZE BALL VALVE.
- (2) NEW BASE MOUNTED END SUCTION HOT WATER PUMPS. SEE DETAIL C3 ON ME501.
- 3 NEW AIR ELIMINATOR. SEE DETAIL B1 ON ME501.
- 4 NEW FLOOR MOUNTED EXPANSION TANK. SEE DETAIL A3 ON ME501.
- 5 NEW 2" HWS TO 2ND FLOOR VAV REHEAT COILS.
- 6 NEW HOT WATER STEEL BENT FLEX TUBE BOILER.
- $\langle 7 \rangle$  CONNECT TO EXISTING HWS PIPING SERVING 1ST FLOOR VAV REHEAT COILS.
- 8 NEW 3" X 2" PUMP SUCTION DIFFUSER WITH FLOOR SUPPORT.
- 9 NEW FLEX PUMP CONNECTORS. TYPICAL OF 4.
- (10) NEW 3" WAFER TYPE CHECK VALVE. TYPICAL OF
- 11 NEW 3" CIRCUIT BALANCING VALVES. TYPICAL OF 2.
- (12) NEW PRESSURE GAUGE WITH SNUBBER AND SHUT-OFF VALVE 0 TO 100 PSIG.
- NEW THERMOMETERS 0° TO 250°F.
- (14) NEW 4" HIGH CONCRETE PAD. SEE DETAIL B3 ON ME501.
- (15) EXISTING CEILING AND WALL OPENINGS AND PIPING SHALL REMAIN FOR NEW PIPING CONNECTION WITHIN BOILER ROOM. MODIFY EXISTING PIPING AS REQUIRED FOR THE NEW PIPING CONNECTIONS.
- (16) 1" DRAIN FROM AIR ELIMINATOR. COMPLETE WITH CONBRACO SHUT-OFF VALVE AND HOSE CONNECTION OR EQUAL.
- (17) NEW 4" CONCRETE HOUSE KEEPING PAD FOR NEW BOILER. SEE DETAIL B3 ON ME501.
- (18) ADJUSTABLE FLOOR SUPPORTS.
- (19) PROVIDE BOILER SAFETY RELIEF VALVE AND DISCHARGE PIPING SO IT ONLY CONTAINS ONE 90° ELL. SIZE PIPING FULL LINE SIZE.
- 20 NEW CHEMICAL POT FEEDER. ANCHOR TO WALL AND TIE INTO HWS AND HWR PIPING AS SHOWN. SEE DETAIL B4 ON ME501.
- 21 PRV STATION FOR MAKE-UP WATER TO HOT WATER SYSTEM. SEE DETAIL A1 ON ME501.
- 22 NEW CONNECTION TO EXISTING CW LINE. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING LINE AND CONNECTION POINT.
- (23) 3/4" THRED-O-LET.
- 24 FLANGED BUTTERFLY VALVES.
- (25) 3"x1-1/2" CONCENTRIC REDUCER.
- (26) AUTOMATIC AIR VENT.
- 27 3"x2" CONCENTRIC REDUCER- FLAT ON TOP.
- 28 3" X 2-1/2" CONCENTRIC REDUCER FLAT SIDE ON TOP.
- 29 EXISTING 2" BALL VAVLE SHALL REMAIN.
- $\langle 30 \rangle$  UNION.
- (31) CHECK VALVE.
- 32 BACKFLOW PREVENTER WITH FUNNEL AND
- 33 REUSE EXISTING 2-1/2" FLANGED 3-WAY MIXING VALVE.
- 34 PRESSURE GAUGE WITH SNUBBER AND SHUT-OFF VALVE 0 TO 60 PSIG.

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/WINWARD M.

PACKER

PROJECT MANAGER: SLW DRAWN BY: STAFF CHECKED BY: WMP

03/12/07 WHW JOB NO.:

06066

SHEET TITLE

HOT WATER FLOW SHEET

ME701